

**The sacred fruit dates: A divine gift for health and healing: A tibb-e-nabvi perspective.**

## ABSTRACT:

## Background:

The medical knowledge gained from the teachings, habits hadiths, deeds and agreements of Prophet Muhammad (s.a.w.) is known as prophetic medicine. These inspirations are religious, spiritual and scientific. There are therapeutic and preventive aspects to prophetic medicine. All medicines from prophetic medicine are antioxidants found in nature. Dates (*Phoenix dactylifera*) and their components such as dry dates and Ajwa dates of Aliah (from Al-Madinah, Saudi Arabia) are remedies used in prophetic medicine. Dates are both a fruit and a food. Prophetic medicine remedies have been reported recently as adjuvant or holistic treatments for many human diseases, including thalassemia, trauma, drug poisoning and viral hepatitis. However, drinking water after consuming date fruit during labor has been shown to accelerate labour and reduce the duration of the second and third stages of labor. In addition, date palms have a 4-hour antioxidant boost that raises pain tolerance and as a result, it shortens the first and third stages of labor. Dates show a role in disease prevention through anti-oxidant, anti-inflammatory and anti-bacterial activity. Because of their high content of carbohydrates, fats, proteins, a high percentage of dietary fibers, minerals, pectin and vitamins (like vitamin C, vitamin B1, vitamin B2, nicotinic acid and vitamin A) they are regarded by many as a natural, complete, and affordable diet. The review summarizes the medical benefits of dates fruits in terms of their potential to control numerous diseases through their anti-oxidant, anti-inflammatory anti-tumor and anti-diabetic effects.

**Keywords:** Prophetic Medicine, Date palms, *Phoenix dactylifera*, Ajwa dates of Aliah.

## 1. INTRODUCTION:

The date palm is probably the world's oldest tree that has been cultivated. It is logical to assume that the Prophet Ibrahim a.s., who was born and raised in the ancient city of Ur, where date palms were grown, had a major influence on the Jewish, Christian and Islamic religions' mention of dates and date palms. These religions have been influenced by Ibrahim's long-lasting love of dates and date palms.<sup>[1]</sup> The Date Palm has multiple functional parts. For more than 6000 years, the fruits of this plant have been utilized as a routine meal by millions of people worldwide, particularly in the Middle East and Northern Africa.<sup>[2]</sup> Egypt is the world's top producer of dates, ahead of Iran. The next three countries are Iraq, Algeria and Saudi Arabia.<sup>[3]</sup>

**2.Material and Methods:** A literature-based analysis was conducted, reviewing traditional texts and recent scientific studies on the use of dates in prophetic medicine. Online search engines like Google Scholar, Pubmed and Research Gate were accessed. Particular emphasis was placed on the nutritional composition of dates, their antioxidant capacity and their clinical effects in various health conditions.

## 3.Tibb-e-Nabvi (Prophetic medicine)

Islam has focused on the general principles of medicine as a means of guiding people in all areas of life. Many verses in the Qur'an address medicine and its application; the prophet (peace be upon him) is quoted often when discussing health, illness, cleanliness and other medical-related topics. There are mentions of illnesses including pleurisy, ophthalmic and leprosy. Similarly, home treatments and therapies like cupping and dates uses are suggested. Later, Muslim scholars conducted a thorough analysis of this corpus of *hadith* on medicine, resulting in the publication of what is now known as Tibb e Nabvi or Medicine of the Prophet. Islam's primary sources are the Qur'an and the *Sunna*.<sup>[4]</sup>

## 4.Historical and Cultural Significance of Dates

The exact origin of the date palm (*Phoenix dactylifera L.*) is thought to have been lost to antiquity, but it is known that it was cultivated as early as 4000 B.C. since it was used to

68 build the temple of the moon god near Ur in southern Iraq - Mesopotamia. Other  
69 evidence of the date palm's great antiquity can be found in Egypt's Nile Valley, where its  
70 branches were used as a symbol for a month and its leaves were used as a year in  
71 Egyptian hieroglyphics. However, the date palm culture in Egypt did not become as  
72 important as that of Iraq until roughly 3000 or 2000 B.C. The Jews consider the date as  
73 one of the seven holy fruits and they celebrate Palm Sunday. But no other religion has

UNDER PEER REVIEW IN IJAR

stressed the holiness of the date and date palm as much as the Islamic religion. The Holy Qur'an mentioned date and date palm in 17 *Sura's* (chapters), of the original 114 *Sura's* and 20 verses of 6,263 verses. Prophet Muhammad (peace be upon him) is reported to have said that the best property is the date palm, that dates cure many disorders and he urged Muslims to eat the date and tend the date palm.<sup>[1]</sup>

The fact that the date fruit and its blessed palm are mentioned 27 times in the Qur'an as *nakhl*, *nakhla*, *al-nakhlah*, *nakhil*, and other names bears witness to the date palm's significance and versatility. The date palm is one of the fruits that the Holy Qur'an mentions. It is also well-known for providing our bodies with the vital nutrients and energy that we need for healthy growth and maintenance. The word *phoenix* is one of the genera having about 14 species, native to tropical regions of Africa, *dactylifera* is "finger-bearing" which refers to fruit clusters.<sup>[5]</sup>

#### **4.1.The religious aspect of date fruit:-**

The Holy Qur'an has more than twenty occurrences of the term "date," as was previously mentioned:

Prophet Mohammad (PBUH) also advised: *"Don't miss the evening meal, even if it happens to be constituted of few dates. Missing of evening meals hasten aging."*

*"He who eats seven dates every morning will not be affected by poison or magic on the day he eats"* [Bukhari, 2001b].

*"And we have made therein gardens of date palms and grapes and we have caused springs of water to gush forth therein".* [ Qur'an 36:34] Surah Ya-Sin.

*"And tall date palms, with ranged clusters "*. [Qur'an 50:10] Surah Qaf.

*"Therein will be fruits and dates and pomegranates".* [ Qur'an 55:68] Surah AR-Rahman.<sup>[5]</sup>

#### **5. Nutritional Values:**

Dates are a fruit and a food (*Phoenix dactylifera L.*). Their high carbohydrate content (total sugars can range from 44 to 88%, primarily fructose and glucose), lipid content (0.2-0.5%), protein content (2.3-5.6%), a high percentage of dietary fibers (6.4- 11.5%), minerals (like selenium), pectin content (0.5-3.9%) and vitamins (like vitamin C, B1 (thiamin), B2 (riboflavin), nicotinic acid (niacin) and vitamin A) are among the reasons why many people view them as a natural, affordable and comprehensive diet.

Dates include selenium, which boosts the immune system, activates a variety of antioxidant enzymes and guards against the development of cancer. Antioxidants found in

dates are mostly composed of phenolic compounds and carotenoids. There are fourteen different kinds of fatty acids found in palm seeds, such as unsaturated fatty acids like palmitoleic, oleic (41.1 to 58.8%), linoleic and linolenic acids.<sup>[6]</sup>

The various other constituents of Dates are discussed under table.1

**Table 1. Various Constituents and Phytochemicals Present in Dates <sup>[7]</sup>**

Nutrient/Phytochemical	Lowest Reported	Highest Reported
Composition		
Moisture (g/100 g)	7.2	50.4
Fat (g/100 g)	0.1	1.4
Ash (g/100 g)	1.0	1.8
Protein (g/100 g)	1.1	2.8
Amino acids (mg/100 g)		
Alanine	30	133
Arginine	34	143
Aspartic acid	49	198
Cysteine	13	67
Glutamic acid	100	326
Glycine	42	107
Histidine	0.1	46
Isoleucine	41	54
Leucine	42	255
Lysine	24	64
Methionine	15	62
Phenylalanine	26	148
Proline	25	92
Serine	23	125
Threonine	9	98
Tryptophan	1	5
Tyrosine	7	52
Carbohydrates (g/100 g)		
Fructose	13.6	38.6
Glucose	17.6	41.4
Sucrose	0.5	33.9

Fiber (g/100 g)		
Soluble	0.4	1.3
Insoluble	3.03	7.4
Total	3.57	10.9
Minerals (mg/100 g)		
Mg	31	150
Na	1.0	261
Ca	5	206
P	35	74
K	345	1287
Mn	0.01	0.4
Fe	0.10	1.5
Zn	0.02	0.6
Cu	0.01	0.8
Se	0.24	0.4
Vitamin (µg/100 g)		
A (Retinol)	3.0	44.7
B <sub>1</sub> (Thiamin)	50	120
B <sub>2</sub> (Riboflavin)	60	160
B <sub>3</sub> (Niacin)	1274	1610
B <sub>6</sub> (Pyridoxal)	165	249
B <sub>9</sub> (Folate)	39	65
C (Ascorbic acid)	400	16,000
α-Carotenoids (µg/100 g)	3.0	3.0
β-Carotenoids (µg/100 g)	2.5	146
Zeaxanthin (µg/100 g)	33.0	33.0
β-Zeaxanthin (µg/100 g)	9	9
Lutein (µg/100 g)	28	541
Neoxanthin (µg/100 g)	184	381
Phenolics (mg/100 g)	3.91	661
Anthocyanins (mg/100 g)	0.2	1.5

## **6. Medicinal and Functional properties: -**

In medicine, dates have been used to treat a wide range of conditions, including diabetes, hypertension, atherosclerosis, cancer prevention and antifungal and immunomodulatory properties.<sup>[8]</sup>

### **6.1. Eases the labour pain:**

The Holy Quran mentions date fruit because it is essential to our daily life [Quran (19:25)] *Surah Maryam* “And shake the trunk of date-palm towards you; it will let fall fresh ripe-dates upon you.” According to *Al-Razi*, three main reasons led Maryam to the date palm trunk: the first was to relieve her labor pains; the second was to give her strength and support; and the third was to shield her from those who had accused her of being chaste.<sup>[5]</sup>

### **6.2. Treating the infertility:**

A white to yellow powder found on the palm tree branches, date palm pollen helps treat ovarian cysts and increases the weight of the testicles and ovaries.<sup>[9]</sup> In addition to treating male infertility, it possesses aphrodisiac and anti-inflammatory properties. Important flavonoids such as luteolin, apigenin and rutin are present in the Egyptian Date palm pollen. It also says that the estrogenic chemicals found in the Egyptian Date palm pollen have been shown to help male infertility.<sup>[10]</sup>

### **6.3. Date fruit as an anti-cancer agent:**

The colonic epithelium and gut bacteria which are increased by date fruits interact to produce polyphenol metabolites, which inhibit the growth of colon cancer cells.<sup>[11]</sup> Numerous cancers can be prevented by date fruit; dried date fruit contains an active ingredient that lowers the risk of breast cancer.<sup>[12]</sup>

### **6.4. In diabetes:**

By producing more insulin and preventing the intestinal absorption of glucose, plants have a significant impact on controlling the function of pancreatic tissues. Since high-sugar and high-calorie foods raise blood sugar levels, it is not recommended for diabetics to eat these kinds of foods. Instead, they should get an adequate amount of dates, as dates have a high fiber content that lowers inflammation and the risk of type 2 diabetes. However, vitamin B6 contained in it helps to treat diabetic neuropathy. Due to their elevated blood sugar levels, diabetics lose magnesium, which is another way that magnesium content helps lower the risk of type 2 diabetes.

It may be advantageous to consume dates with or without dairy products. Additionally,

those in charge of educating diabetic patients about nutrition ought to base their recommendations on low-GI meals. Therefore, even when dates are ingested alone, diabetic patients need to be reassured that consuming dates in comparable amounts won't raise or impact their blood sugar levels.<sup>[13]</sup> No matter whether a variety of date fruit is used, according to another study, healthy people have a low glycemic index while consuming dates and people with diabetes see no change in blood sugar levels after consuming dates.<sup>[14]</sup>

#### **6.5. As a cure for aging:**

As we already know, fruits and vegetables are a great source of naturally occurring antioxidants that help to reduce inflammation and other issues brought on by premature aging of cells. The medical benefits of date palm have been demonstrated to include strengthening mothers' immune systems following childbirth, acting as an anticancer and lowering the possibility that wrinkles will appear in women.<sup>[15]</sup>

#### **6.6. Hepatoprotective Effects of Dates and Ajwa Date Fruit Extract:**

It has been shown that *nigella sativa* and dates together protect the structure and functioning of the liver against hepatotoxicity caused by aflatoxin B-1.<sup>[16]</sup>

The hepatocarcinogenesis process depends on oxidative stress, which is relieved by Ajwa dates in particular.<sup>[17]</sup> Ajwa date fruits protected and treated acute diclofenac toxicity effects on the liver, lungs<sup>[18]</sup> and colon<sup>[19]</sup> in a dramatic and effective manner. Ajwa dates also prevented the harm caused by medication overdosage and quickly treated the toxicity.

S'ad bin Abi Waqas, may Allah be pleased with him, narrated that the Messenger of Allah (s.a.w.) said, *"He who eats seven dates of Madina (Ajwa dates) every morning will not be affected by poison and magic on the day he eats them."*<sup>[3]</sup>

#### **6.7. Date and Heart Disease:**

It is well-recognized that antioxidants, vitamins and carotenoids have protective properties. As a result, these essential compounds currently have a link to a lower chance of developing several chronic illnesses, including atherosclerosis, heart disease and neurological disorders.<sup>[20]</sup> The potassium in date fruit can also strengthen the heart.<sup>[21]</sup>

Date fruit has an effective role in ACE (angiotensin-converting enzyme) inhibition, lowering blood pressure in blood vessel endothelium as a result. This is made possible by the phenolic chemicals found in date palms. The date has other benefits, including protecting against cardiovascular (CVD) illness, lowering blood pressure and lessening oxidative stress. Additionally, dates are a perfect treatment for high blood pressure



because of the high fiber content in it.<sup>[22]</sup> One of the main risk factors for the onset of CCVD is hypertension. Eastern Africa and the Middle East have long utilized date fruit as a meal and medication to treat hypertension. But research on date fruit's anti-hypertensive properties has just lately been conducted.<sup>[23]</sup>

#### **6.8. Therapeutic benefits of Ajwa dates (*Phoenix dactylifera*) on some hematological disorders:**

Prophet Muhammad (s.a.w.) also highly advised the prophetic medicinal treatment of Ajwa dates of *Aliah* (from Madinah). Hemoglobin levels rose greater when iron was consumed in addition to Ajwa dates than when iron was given alone. Another study found that school girls with iron deficiency anemia who consumed dates had higher serum ferritin, hematocrit and hemoglobin levels. It has been observed that *ajwa* dates can successfully prevent and treat the harmful hematological and histological effects of acute diclofenac poisoning.<sup>[24]</sup>

Pharmacological properties of date fruit and its various effects in different experimental studies are discussed in table 2.

**Table 2. Pharmacological Properties of Date Fruits and Their Mechanism Of Action in Experimental Systems of Study**<sup>[7]</sup>

Pharmacological Property	Mechanism Of Action
<b>In vitro studies</b>	
1. Antioxidant activity	Scavenges free radicals, inhibits iron-induced lipid peroxidation and protein oxidation
2. Antimutagenic activity	Inhibits benzo (a) pyrene-induced mutagenicity in the Ames test.
3. Anthelmintic activity	Inhibits haemolytic activity of streptolysin O
4. Antiviral activity	Prevent lytic activity of Pseudomonas phage ATCC 14209-B1 on Pseudomonas aeruginosa.
5. Antifungal activity	Antifungal activity against <i>Candida albicans</i> and <i>C. krusei</i> .

<b>Animal studies</b>	
1. Anti-inflammatory activity	Increase plasma antioxidant (Vitamin C, E, A, $\beta$ - carotene) levels and decrease lipid peroxides. Reduce swelling, ESR and plasma fibrinogen.
2. Action on gastrointestinal tract	Increase gastrointestinal transit time, reduces ethanol-induced gastric ulceration.
3. Antihyperlipidemic activity	Reduce plasma triglycerides, total and LDL cholesterol.
4. Hepatoprotective activity	Prevent dimethotrate-induced hepatotoxicity— decrease hepatic markers (ALT, AST, alkaline phosphatase, GGT and LDH), decrease vacuolization, necrosis, congestion, inflammation and enlargement of sinusoids. Provide protective effect against CCl <sub>4</sub> induced hepatotoxicity.
5. Nephroprotective activity	Attenuate gentamicin-induced renal damage— reduce levels of creatinine and urea
6. Anticancer activity	Regression of Sarcoma-180 tumour in mice.
7. Immunostimulant activity	Enhance both cell mediated and humoral immunity.
8. Gonadotropic activity	Increase FSH, LH, testosterone, oestrogen— increase spermatogenesis, sperm count, growth.

## 7. Discussion:

The significance of the date palm (*Phoenix dactylifera*) spans across history, culture, religion and medicine, highlighting its unparalleled role in human civilization. As one of the oldest cultivated trees, the date palm's presence in the ancient city of Ur and its prominence in the lives of Prophet Ibrahim and subsequent religious traditions

underscore its historical and spiritual importance. Dates have been a dietary staple for over 6000 years, particularly in the Middle East and Northern Africa, and continue to be a vital food source due to their nutritional richness.<sup>[1,2]</sup>

The religious reverence for dates, especially in Islam, is evident from numerous mentions in the Qur'an and *Hadith*, where they are praised for their health benefits and symbolic significance. Islamic teachings, through Tibb-e-Nabvi, incorporate dates as a remedy for various ailments, reinforcing their role in holistic health practices.<sup>[4]</sup>

Nutritionally, dates are a powerhouse, offering high levels of carbohydrates, dietary fibers, vitamins and minerals, making them a comprehensive dietary supplement. Their medicinal properties are extensive, providing benefits in managing diabetes, hypertension and certain cancers. The unique compounds in dates, such as antioxidants and phenolic compounds, contribute to their effectiveness in disease prevention and health maintenance.<sup>[6]</sup>

In contemporary research, the therapeutic potentials of dates, particularly in easing labor pain, treating infertility and offering hepatoprotective and anti-aging effects, are being increasingly recognized. *Ajwa* dates, in particular, have shown promising results in protecting against toxicities and improving hematological health.<sup>[5,10,15,16]</sup>

Overall, the multifaceted benefits of dates—ranging from their historical and cultural significance to their nutritional and medicinal properties affirm their value as a vital fruit with profound impacts on health and well-being. Further research into their bioactive compounds and therapeutic applications could unlock new dimensions in nutritional science and medicine.

## **8. Conclusion:**

After tasting a date, you won't be able to resist consuming more of this sweet and delectable fruit. A fruit that is high in fiber and a fantastic source of vitamins and minerals is the date. The useful qualities of its ingredients offer us numerous health advantages, including the ability to prevent cancer and heart disease, relieve pain in both men and women and increase vitality. Due to its active properties as an antioxidant, anticancer, deterrent, etc., Dates are powerful as an aphrodisiac for men. Dates do contain a lot of calories and energy, despite their great health benefits. Nevertheless, further research on the possible therapeutic effects, chemical constituents etc is needed to help unlock possible new dimensions in medicine.

**Acknowledgements:** None to make

**Financial support:** None

**Author contributions:**

**Concept , design, analysis and interpretation of data :** Faizan Khan

**Drafting the article and critical analysis :** Saliha, Mohammad Ismail

**Final approval of the version to be published:** Iftikhar Ahmad

**Competing interests:** Authors state no conflict of interest.

UNDER PEER REVIEW IN IJAR

## REFERENCES:

1. Zaid A, De Wet PF. Chapter II Origin, geographical distribution and nutritional values of date palm. FAO Plant Production and Protection Papers. 1999:29–44. Available at: <https://www.fao.org/4/y4360e/y4360e06.htm>
2. Elmi A, Zargar A, Mirghafourvand M, Fazljou SMB, Navid RB. Clinical effects of date palm (*Phoenix dactylifera* L.): A systematic review on clinical trials. Complement Ther Med. 2020;51:102429. DOI:10.1016/j.ctim.2020.102429.
3. FAOSTAT. Agriculture Organization of the United Nations Statistics Division. Econ Soc Dev Dep. 2016. Available from: <http://faostat3.fao.org/home/E> [Accessed 2016 Dec 31].
4. Idriss ID, Thani TM, Muhammad HA, Idris HS. The prophetic tradition in modern healing: a holistic approach to prophetic medicine. J Educ Soc Sci. 2020;15(2):88–94.
5. Nazri MKNZ, Yusoff AM, Nazri NFZ, Khalaf NAR, Rahman AA. The descriptions of date palms and an ethnomedicinal importance of dates mentioned in the Quran. Mediterr J Soc Sci. 2016;7(2):405–14. Doi: 10.5901/mjss.2016.v7n2p405.
6. El Sayed SM. Natural remedies of prophetic medicine are promising in the management of viral hepatitis: towards better preventive and therapeutic outcomes (A review article). Am J Clin Med Res. 2023;11(1):14–21.DOI: 10.12691/ajcmr-11-1-3
7. Baliga MS, Baliga BRV, Kandathil SM, Bhat HP, Vayalil PK. A review of the chemistry and pharmacology of the date fruits (*Phoenix dactylifera* L.). Food Res Int. 2011;44(7):1812–22.<https://doi.org/10.1016/j.foodres.2010.07.004>
8. Al-Harrasi A, Rehman NU, Hussain J, Khan AL, Al-Rawahi A, Gilani SA, et al. Nutritional assessment and antioxidant analysis of 22 date palm (*Phoenix dactylifera*) varieties growing in Sultanate of Oman. Asian Pac J Trop Med. 2014;7(Suppl 1):S591–8. [https://doi.org/10.1016/S1995-7645\(14\)60294-7](https://doi.org/10.1016/S1995-7645(14)60294-7)
9. Rasouli H, Norooznezhad AH, Rashidi T, Hoseinkhani Z, Mahnam A, Tarlan M, et al. Comparative in vitro/theoretical studies on the anti-angiogenic activity of date pollen hydroalcoholic extract: Highlighting the important roles of its hot polyphenols. Bioimpacts. 2018;8(4):281–9.doi: [10.15171/bi.2018.31](https://doi.org/10.15171/bi.2018.31)
10. El-Kashlan AM, Nooh MM, Hassan WA, Rizk SM. Therapeutic potential of date palm pollen for testicular dysfunction induced by thyroid disorders in male rats. PLoS One. 2015;10(10):e0139493. doi: [10.1371/journal.pone.0139493](https://doi.org/10.1371/journal.pone.0139493)
11. Eid N, Enani S, Walton G, Corona G, Costabile A, Gibson G, et al. The impact of date palm fruits and their component polyphenols, on gut microbial ecology, bacterial metabolites and colon cancer cell proliferation. J Nutr Sci.

2014;3:e46.DOI: [10.1017/jns.2014.16](https://doi.org/10.1017/jns.2014.16)

12. Al-Alawi RA, Al-Mashiqri JH, Al-Nadabi JS, Al-Shihi BI, Baqi Y. Date palm tree (*Phoenix dactylifera* L.): Natural products and therapeutic options. *Front Plant Sci.* 2017;8:845. <https://doi.org/10.3389/fpls.2017.00845>
13. Miller CJ, Dunn EV, Hashim IB. The glycaemic index of dates and date/yoghurt mixed meals. Are dates ‘the candy that grows on trees’? *Eur J Clin Nutr.* 2003;57(3):427–30. DOI: [10.1038/sj.ejcn.1601565](https://doi.org/10.1038/sj.ejcn.1601565)
14. Alkaabi JM, Al-Dabbagh B, Ahmad S, Saadi HF, Gariballa S, Ghazali MA. Glycemic indices of five varieties of dates in healthy and diabetic subjects. *Nutr J.* 2011;10(1):59. DOI: [10.1186/1475-2891-10-59](https://doi.org/10.1186/1475-2891-10-59)
15. Chaira N, Ferchichi A, Mrabet A, Sghairoun M. Chemical composition of the flesh and the pit of date palm fruit and radical scavenging activity of their extracts. *Pak J Biol Sci.* 2007;10(13):2202–7. DOI: [10.3923/pjbs.2007.2202.2207](https://doi.org/10.3923/pjbs.2007.2202.2207)
16. Al-Ghasham A, Ata HS, El-Deep S, Meki AR, Shehada S. Study of protective effect of date and *Nigella sativa* on aflatoxin B1 toxicity. *Int J Health Sci (Qassim).* 2008;2(2):26–34.
17. El Sayed SM. Oxidative stress in hepatocarcinogenesis and role of antioxidant therapy. In: Watson RA, editor. *Handbook of Oxidative Stress in Cancer: Mechanistic Aspects*. Singapore: Springer Nature Singapore; 2022. p. 821–38. DOI: [10.12691/ajcp-10-1-2](https://doi.org/10.12691/ajcp-10-1-2)
18. Aljuhani N, Elkablawy MA, Elbadawy HM, Alahmadi AM, Aloufi AM, Farsi SH, et al. Protective effects of Ajwa date extract against tissue damage induced by acute diclofenac toxicity. *J Taibah Univ Med Sci.* 2019;14(6):553–9. DOI: [10.1016/j.jtumed.2019.10.002](https://doi.org/10.1016/j.jtumed.2019.10.002)
19. Hassan SM, Aboonq MS, Albadawi EA, Aljehani Y, Abdel-Latif HM, Mariah RA, et al. The preventive and therapeutic effects of Ajwa date fruit extract against acute diclofenac toxicity-induced colopathy: An experimental study. *Drug Des Devel Ther.* 2022;16:2601–16. DOI: [10.2147/DDDT.S344247](https://doi.org/10.2147/DDDT.S344247)
20. Al-Farsi M, Alasalvar C, Morris A, Baron M, Shahidi F. Comparison of antioxidant activity, anthocyanins, carotenoids, and phenolics of three native fresh and sun-dried date (*Phoenix dactylifera* L.) varieties grown in Oman. *J Agric Food Chem.* 2005;53(19):7592–9. DOI: [10.1021/jf050579q](https://doi.org/10.1021/jf050579q)
21. Hossain AS. Dried dates fruit and its biochemical and nutrient content: Uses as diabetic food. *Asian J Clin Nutr.* 2015;7:90–5. DOI: [10.3923/ajcn.2015.90.95](https://doi.org/10.3923/ajcn.2015.90.95)
22. Alfaro-Viquez E, Roling BF, Krueger CG, Rainey CJ, Reed JD, Ricketts ML. An

extract from date palm fruit (*Phoenix dactylifera*) acts as a co-agonist ligand for the nuclear receptor FXR and differentially modulates FXR target-gene expression in vitro. PLoS One. 2018;13(1).<https://doi.org/10.1371/journal.pone.0190210>

23. Tang ZX, Shi LE, Aleid SM. Date fruit: Chemical composition, nutritional and medicinal values, products. J Sci Food Agric. 2013;93(10):2351–61. DOI: [10.1002/jsfa.6154](https://doi.org/10.1002/jsfa.6154)

24. Mogharbel GH, Badawi AS, Zaman AY, Abd Elmoniem MM, Abdel-Rahman IM, Alenazi ME, et al. Therapeutic benefits of prophetic medicine remedies in treating hematological diseases (A review article). Am J Blood Res. 2023;13(4):130–9.

UNDER PEER REVIEW IN IJAR